Remarks:

This Amendment and the accompanying Request for Continued Examination are responsive to the final Office action dated September 7, 2006. Prior to entry of this Amendment, claims 5-9, 16, 18-22, 24 and 29 remained pending in the application.

In the September 7, 2006 Office action, the Examiner rejected claims 5-6, 9, 16, 18-20, and 24 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,286,921 to Ochi et al. in view of U.S. Patent No. 5,097,248 to Kumada et al., and rejected claims 7-8, 21-22, and 29 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,286,921 to Ochi et al. in view of U.S. Patent No. 5,097,248 to Kumada et al. and further in view of U.S. Patent No. 6,936,761 to Pichler. As set forth below, applicant respectfully traverses each of the Examiner's grounds for rejection.

Nevertheless, in the interest of furthering prosecution of the pending claims on the merits, applicant has amended claims 5, 6, 9, 18, 20, and 24, and added a new claim 30. In view of these amendments and the following remarks, applicant requests reconsideration of the application and allowance of the pending claims.

Clarification of Election / Restriction

In an election/restriction requirement mailed May 25, 2006, the Examiner distinguished patentably distinct Species I, which the Examiner stated was directed to figures 2 and 5 of the application, and Species II, which the Examiner stated was directed to figures 3 and 6 of the application. The election requirement resulted from a prior amendment filed March 9, 2006, in which applicant amended all pending claims to include the feature of an electrode having a hollow interior that printing fluid passes

through. In a response to the election/restriction requirement filed June 26, 2006, applicant elected Species I with traverse, noting that all pending claims read on the elected species, and further noting that figure 3 (a schematic diagram) does not exclude an electrode with a hollow interior and thus should be included in Species I.

In the September 7, 2006 Office action, the Examiner responded in part by stating "[t]his application contains claims 5-9, 16, 18-22, 24, and 29 drawn to an invention *nonelected* with traverse in the response to election/restriction filed on 6/26/06" (emphasis added). This statement was clarified in a conversation between Examiner L. Liang and attorney W. Kamstein on October 19, 2006, in which the Examiner acknowledged that the word "nonelected" was a typographical error and should have been written as "elected." In the same conversation, the parties further agreed that as the purpose of the election was to elect the species directed to an electrode having a hollow interior, all figures not excluding such a hollow electrode (including figure 3) should be included in the elected species.

Rejections under 35 USC § 103

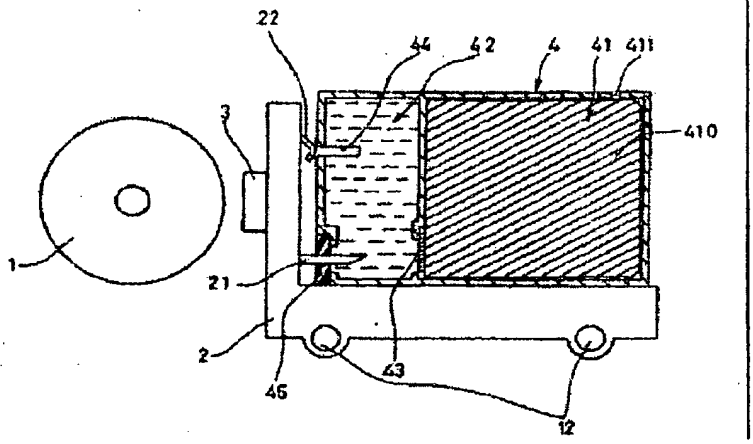
The Examiner rejected claims 5-6, 9, 16, 18-20, and 24 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,286,921 to Ochi et al. ("Ochi") in view of U.S. Patent No. 5,097,248 to Kumada et al. ("Kumada"), and rejected claims 7-8, 21-22, and 29 under 35 U.S.C. §103(a) as being unpatentable over Ochi in view of Kumada and further in view of U.S. Patent No. 6,936,761 to Pichler ("Pichler"). Applicant traverses all of these rejections. Nevertheless, to facilitate prosecution of the present

application, applicant has amended the pending claims to further distinguish them from the cited art, as described below.

To establish obviousness by combining two or more references, the Examiner must show "some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art." MPEP § 2143.01. *See also Karsten Manufacturing Corp. v. Cleveland Golf Co.*, 58 U.S.P.Q.2d 1286, 1293 (Fed. Cir. 2001) ("there must be some suggestion, motivation, or teaching in the prior art that would have led a person of ordinary skill in the art to select the references and combine them in the way that would produce the claimed invention.") As described below, no such teaching, suggestion, or motivation exists in this case.

As shown below in Fig. 9 of U.S. Patent No. 6,286,921 to Ochi et al., Ochi discloses a printing fluid detector having an electrode (21) with a hollow interior through which printing fluid may pass. However, as the Examiner notes in the September 7, 2006 Office action (p.4), Ochi fails to teach, suggest, or motivate combining a hollow electrode with an electrically conductive coating that is either corrosion resistant or configured to increase the effective surface area of the electrode.

FIG.9



On the other hand, Kumada discloses a fluid-detecting electrode divided into sections, where the sections are alternately conductive or resistive, and wherein the various sections may be partially or entirely coated with a film that repels the fluid to be measured (col. 2, lines 46-54; Fig. 5). Kumada further discloses that an additional conducting film may be placed on the exposed (conducting) sections of the electrode to prevent corrosion (col. 3, lines 18-22). However, Kumada does not teach, suggest, or motivate combining a conductive coating with an electrode having a hollow interior through which printing fluid may pass. Since neither Ochi nor Kumada provides any motivation to combine the features found in applicant's claimed invention, applicant traverses the Examiner's obviousness rejections. Nevertheless, to facilitate prosecution, applicant has amended the pending claims as described below.

Specifically, applicant has amended claims 5-9, 16, 18-22, 24, and 29 to include the feature that an electrically conductive coating is disposed on an *interior* surface of a hollow electrode. For example, amended claim 5 (emphasis added) reads:

> 5. A printing device configured to print a printing fluid onto a printing medium, the printing device comprising:
>
> a printing fluid reservoir configured to hold a volume of the printing fluid;
>
> a print head assembly configured to transfer the printing fluid to the printing medium, wherein the print head assembly is fluidically connected to the printing fluid reservoir; and
>
> a printing fluid detector configured to detect a characteristic of the printing fluid, wherein the printing fluid detector includes a first electrode and a second electrode configured to be in contact with the printing fluid, wherein at least one of the first electrode and the second electrode provides a hollow interior that the printing fluid passes through and includes *an electrically conductive coating disposed on an inner surface of the hollow interior* and over an electrically conductive substrate, and wherein the electrically conductive coating is permeable to printing fluid.

As described previously, neither Ochi nor Kumada explicitly or implicitly teaches, suggests, or motivates combining the features they disclose to arrive at a hollow, coated electrode. This is particularly apparent with regard to a hollow electrode coated on its interior surface, because the only natural combination, if any, of the exterior-coated solid electrode taught by Kumada with the "hollow needle electrode" of Ochi (col. 8, line 53) would be to coat the electrode of Ochi on its exterior surface. Indeed, Ochi's

exclusive and repeated description of the hollow electrode as a "needle electrode" or a "hollow needle" (col. 8, lines 55, 59, 64, 67; col. 9, lines 36, 40, 63; col. 10, lines 37, 39, etc.) suggests that the hollow electrode of Ochi is likely too narrow to be easily coated on its interior surface while remaining hollow. Thus, the structure of the needle electrode disclosed by Ochi teaches away from an interior coating, and a person of ordinary skill in the art would not be led to combine Ochi with Kumada to arrive at any of applicant's presently amended claims.

With further regard to claims 7-8, 21-22, and 29, the Examiner rejected those claims as obvious based on the combination of Ochi with Kumada, and further in view of Pichler, which discloses electrically conductive polymers of the type asserted in those claims. However, as described above, neither Ochi nor Kumada explicitly or implicitly teaches, suggests, or motivates a combination leading to a hollow electrode coated on an interior surface, and since Pichler does not disclose a hollow electrode, claims having the additional feature of a particular class of conductive polymers also are not an obvious combination of the cited references.

New claim 30 recites similar features to those recited in amended claim 5, except that the electrically conductive coating does not specify coating the interior of the hollow electrode, but rather is configured to increase the effective electrically conducting surface area of the electrode. Applicant believes that this claim is allowable over the combination of Ochi and Kumada, because as described above, there is no teaching, suggestion, or motivation in either of those references to coat a hollow electrode with an electrically conductive, permeable coating. Furthermore, there is no teaching, suggestion, or motivation in either of Ochi or Kumada to coat any electrode (whether hollow or solid) with a conductive coating for the purpose of increasing its effective surface area. On the contrary, Ochi discloses only uncoated electrodes, and Kumada discloses coating portions of an electrode either for *decreasing* the effective surface area of the electrode (col. 2, lines 50-54; col. 4, lines 36-41), or for protecting exposed portions of the electrode from corrosion (col. 3, lines 17-22), but not for increasing the conductive surface area of the electrode. Therefore, applicant believes that Kumada teaches away from a coating configured to increase conductive surface area, and a person of ordinary skill in the art would not be led to combine Ochi with Kumada to arrive at the invention of claim 30.

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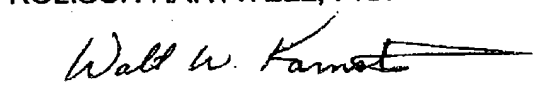
Conclusion

Applicant believes that this application is now in condition for allowance, in view of the above amendments and remarks. Accordingly, applicant respectfully requests that the Examiner issue a Notice of Allowability covering the pending claims. If the Examiner has any questions, or if a telephone interview would in any way advance prosecution of the application, please contact the undersigned attorney of record.

Respectfully submitted,

KOLISCH HARTWELL, P.C.



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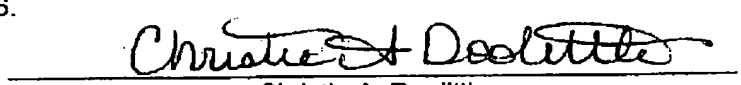
CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to Examiner L. Liang, Group Art Unit 2853, Assistant Commissioner for Patents, at facsimile number (571) 273-8300 on November 24, 2006.



Christie A. Doolittle